

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

MAILED

SEP 24 2004

U.S. PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte GAN-MOOG CHOW, T. DYNK K. KUNHARA,  
T. DANNY XIAO, CHRISTOPHER W. STROCK,  
and RAYMOND A. ZATORSKI

Appeal No. 2004-1778  
Application No. 09/964,544

ON BRIEF

Before PAK, KRATZ and DELMENDO, Administrative Patent Judges.  
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claims 19-22, 24 and 25, which are all of the claims pending in this application.

BACKGROUND

Appellants' invention relates to a thin film or coated material that is devoid of splat microstructures greater than

several microns thick.<sup>1</sup> An understanding of the invention can be derived from a reading of exemplary claim 19, which is reproduced below.

19. A thin film or coated material made by thermal spraying and being devoid of splat microstructures greater than several microns thick having a nanostructured material with a particle size of less than 100 nm and containing an oxide selected from the group consisting of alumina, zirconia, yttria, and mixtures thereof.

The sole prior art references of record relied upon by the examiner in rejecting the appealed claims is:

|                    |           |               |
|--------------------|-----------|---------------|
| Hunt et al. (Hunt) | 5,997,956 | Dec. 07, 1999 |
|--------------------|-----------|---------------|

Claims 19 and 20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Hunt.<sup>2</sup> Claims 21, 22, 24 and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hunt.

We refer to the brief and reply brief and to the answer for a complete exposition of the opposing viewpoints expressed by

---

<sup>1</sup> Appellants relate that splat microstructures are pancake-like structures in thermally sprayed coatings (specification, page 2, lines 10-12).

<sup>2</sup> Appellants do not argue that any of the appealed claims are entitled to an effective filing date prior to the § 102(e) date that the relied upon disclosure of Hunt is entitled to.

appellants and the examiner concerning the issues before us on this appeal.

OPINION

Having carefully considered each of appellants' arguments set forth in the brief and reply brief, appellants have not persuaded us of reversible error on the part of the examiner in presenting a prima facie case of anticipation and obviousness, neither of which has been effectively refuted by appellants' arguments. Accordingly, we will affirm the examiner's rejections for substantially the reasons set forth by the examiner in the answer. We add the following for emphasis.

Appellants note that the rejected claims do not stand or fall together. However, no separate arguments are presented for claims 19 and 20 with regard to the examiner's anticipation rejection. Consequently, we select claim 19 as the representative claim, on which we shall decide this appeal as to the examiner's anticipation rejection.

Appellants do not dispute the examiner's determination that Hunt discloses thin films corresponding to the here claimed subject matter, including "nanostructured material (col. 11, ln. 52-65) having a particle size of less than 100 nm (col. 24, ln. 21-22)," which "material may be alumina, zirconia, or yttria

(col. 20, ln. 51-56).” See page 3 of the answer. Rather, appellants urge that the here claimed “film or coated material is made by thermal spraying solution precursors and are devoid of splat microstructures greater than several microns thick whereas the Hunt reference discloses powder formation and thin film deposition by vapor deposition” (brief, page 3). Appellants note that the examiner has acknowledged that Hunt is silent with respect to splat microstructures. Consequently, appellants urge that appealed claims 19 and 20 are not anticipated by Hunt.

We are not persuaded by those contentions of appellants. Representative claim 19 describes the product film or coated material, at least in part, by the process by which it is made. Since appellants’ claims are in product-by-process format, the patentability of those claims is determined based on the product itself, not on the method of making it. See In re Thorpe, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985) (“If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.”). Whether a rejection is under 35 U.S.C. § 102 or § 103, when the appellants’ product and that of the prior art appear to be identical or substantially identical, the burden shifts to the

appellants to provide evidence that the prior art product does not necessarily or inherently possess the relied-upon characteristics of the appellants' claimed product. See In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980); In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977); In re Fessmann, 489 F.2d 742, 745, 180 USPQ 324, 326 (CCPA 1974).

The reason is that the Patent and Trademark Office is not able to manufacture and compare products. See Best, 562 F.2d at 1255, 195 USPQ at 434; In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

Here, the examiner has reasonably determined that Hunt prepares the product film coating by a method including "spraying very finely atomized precursors [that] would have resulted in a film devoid of splat microstructures, particularly given that Hunt teaches that the maximum droplet size of said precursors is further taught to be less than 2  $\mu$ m (col. 8, ln. 28-30)" (answer, page 3).

While appellants' arguments suggest that Hunt's product would include splat microstructures of the type precluded by the claim language because of Hunt's alleged use of powder formation and vapor deposition, the examiner has correctly noted that "Hunt teaches thin film deposition by the thermal spraying process of

plasma spraying (col. 5, ln. 17-18) wherein the spraying solution is made of chemical precursors and is very finely atomized" (answer, page 5). Consequently, as explained by the examiner (answer, pages 5 and 6), "spraying very finely atomized precursors would have [necessarily] resulted in a film devoid of splat microstructures greater than several microns thick." Appellants have not specifically addressed that determination of the examiner. Also, compare column 5, lines 22-31 and column 8, lines 28-30 of Hunt with page 3 of the specification. Moreover, at page 3 of appellants' specification, it is stated that "[f]rom commercial experience, sprayable powders need to be of a certain size such as about 30 microns or larger for efficient deposition . . . . these large diameter agglomerates produce longer splat microstructures in the coating. However, as explained by the examiner, "Hunt teaches that the maximum droplet size of said precursors is taught to be less than 2  $\mu\text{m}$  (col. 8, ln. 28-30), significantly less than the 30 micron or greater sized particles stated by Appellant as sizes which produce the undesirable splat formation" (answer, page 6).

Because the claimed and prior art products appear to be substantially identical and are made by processes that appear to be substantially identical, we determine that the examiner has

set forth a reasonable basis for the examiner's assertion that the product film of Hunt would not include the undesired splat microstructures and appellants have not persuasively rebutted that factual assertion of the examiner. It follows that we will sustain the examiner's § 102(e) rejection of claims 19 and 20 as being anticipated by Hunt.

Concerning the examiner's § 103(a) rejection of claims 21, 22, 24 and 25 over Hunt, we note that appellants do not furnish separate arguments for each of the so rejected claims. Consequently, we select claim 21 as the representative claim on which we shall decide this appeal as to claim 21. Appellants have not contested the examiner's obviousness position concerning the fine scale grading of a multilayer film (answer, page 4), which represents the additional feature required by claim 21 over those required by claim 19, which latter claim was discussed above. Rather, appellants fall back on an argument similar to the argument made against the examiner's anticipation rejection of claim 19, in urging that Hunt would not be consonant with an obviousness rejection because of alleged large splat formation associated with thermal spraying of powder agglomerates. However, for the reasons stated above and in the answer, we do not find that argument persuasive in that Hunt prepares the

product films disclosed therein by a process that is substantially identical to the process disclosed by appellants. It follows that, on this record, we will affirm the examiner's § 103(a) rejection of claims 21, 22, 24 and 25 over Hunt.

CONCLUSION

The decision of the examiner to reject claims 19 and 20 under 35 U.S.C. § 102(e) as being anticipated by Hunt and to reject claims 21, 22, 24 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Hunt is affirmed.



No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

CHUNG K. PAK  
Administrative Patent

  
PETER F. KRATZ  
Administrative Patent Judge

BOARD OF PATENT  
APPEALS  
AND  
INTERFERENCES

  
ROMULO H. DELMENDO  
Administrative Patent Judge

PFK/sld

Appeal No. 2004-1778  
Application No. 09/964,544

Page 10

NAVAL RESEARCH LABORATORY  
ASSOCIATE COUNSEL (PATENTS)  
CODE 1008.2  
4555 OVERLOOK AVENUE, S.W.  
WASHINGTON, DC 20375-5320